

A NEWLY FOUND METEORIC STONE FROM LAKE OKE- CHOBEE, FLORIDA.¹

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The stone described below was received from Mr. J. O'Neill of Ritta, Palm Beach County, Florida, who states that it was brought up in his net, while seine fishing, some three quarters of a mile from the shore, in the lake above mentioned.

The fragments secured weighed all together about 1,100 grams, the curved surfaces of which suggest that the stone from which they were broken had a diameter of 10 or 12 inches or more.

There is no definite record of a fall in this immediate vicinity, though Mr. O'Neill writes under date of April 11, 1916:

I clearly remember what was supposed to be a meteorite falling about 13 years ago, but it would be hard to ascertain just where it fell. All we know about it is that it fell west of us (i. e., west of Ritta), and people living 50 miles away said it fell east of them. The meteorite, or what was supposed to be one, fell at 10 o'clock one dark night. The sky was suddenly illuminated as if the whole world was on fire, and then there was a great noise like a very large explosion.

These are the well-known phenomena attending a meteoric fall, but whether or not they have any bearing upon the present find will probably never be known absolutely. Correlation is suggested but not proven.

Although from a locality so unfavorable for its preservation, the stone is still firm and shows the characteristic thin, rough, and lusterless black crust. Freshly broken surfaces show a dense, green-gray rock weathered to brown, with little to suggest its meteoric nature until examined under a pocket lens, when the outlines of broken chondrules or pits from which the chondrules have fallen become distinctly visible. Metallic points are few, and scarcely recognizable until the surface is ground smooth. In thin sections under the microscope the chondritic type of the stone is at once evident, the chondrules occurring in all conditions from mere fragments to very perfect spherical forms. They are composed in some cases of olivines, in others of enstatites, and still again of beautifully polysynthetically

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twinned monoclinic pyroxenes, the individual laminae of which give maximum extinctions of 28° . In but few cases were observed the grate or barred structures so common in olivine chondrules. The usual cryptocrystalline forms are common. The groundmass of the stone is plainly fragmental, consisting of a dense aggregate of minute particles of the three silicates mentioned, throughout which are scattered abundant larger fragments, and in addition numerous granules of metallic iron and iron sulphide. Rarely do these last occur surrounding the chondrules, wholly or in part, but rather as disseminated particles. The fragmental structure of the stone is its most pronounced feature, and relegates it to Brezina's class of chondritic tuffs (Cc) or spherical chondrites.

The staining of the stone through oxidation renders the detection of minor constituents difficult if not impossible. No phosphatic mineral could be recognized microscopically. The pulverized stone, however, digested in cold dilute nitric acid (1 part HNO_3 to 10 H_2O) for but 15 minutes reacted distinctly for calcium and phosphoric acid. It is well to remember in this connection, however, that the stone had been soaking for an undetermined period in the waters of Lake Okechobee, and that the lake itself must receive a portion of its waters from the phosphate fields to the north. Whether or not these facts have any bearing upon the chemical reactions noted, the writer is not prepared to even guess.

This is the first reported find of a meteorite within the state limits of Florida, and while in itself it presents nothing of unusual interest, the manner of its finding is decidedly unusual. So far as I am aware there is no other record of a meteorite having been found under similar conditions. It will be known as the Lake Okechobee stone.